

IN THE CLAIMS:

1. (Previously Presented) A method for updating presence information regarding a target end user managed by a presence server based on information derived from a telephony-related action, the method comprising:
 - (a) receiving a signaling system seven (SS7) message in response to a telephony-related action performed by a target end user to which other end users are subscribed with the presence server;
 - (b) determining, based on the SS7 message, whether presence registration processing is required;
 - (c) in response to determining that presence registration processing is required, automatically generating a presence registration message including presence information usable by the presence server for automatically indicating to the end users who are subscribed to the target end user with the presence server a presence status for the target end user, wherein the presence server comprises a server that manages presence information for a collection of entities and subscriptions to those entities; and
 - (d) transmitting the presence registration message to the presence server over an IP network.
2. (Previously Presented) The method of claim 1 wherein the telephony-related action includes dialing a called party telephone number utilizing a PSTN telephone to initiate a call from the target end user to the called party telephone number and the signaling system seven message is an IAM message.

3. (Original) The method of claim 1 wherein the telephony-related action includes entering DTMF digits using a PSTN telephone handset after a call has been established, the DTMF digits forming a code for instructing an end office to formulate the SS7 message.
4. (Previously Presented) The method of claim 3 wherein the SS7 message is a transaction capabilities application part (TCAP) message containing presence information for the target end user.
5. (Previously Presented) A method for updating presence information regarding a target end user with a presence server based on information derived from a signaling message relating to a telephony-related action performed by the target end user, the method comprising:
 - (a) receiving a signaling system 7 (SS7) message in response to a telephony-related action performed by a target end user, wherein the telephony-related action is the activation or change in location of a mobile telephone handset and the SS7 message is a message for updating the status of the target end user in at least one of a home location register (HLR) and a visitor location register (VLR); and
 - (b) intercepting the SS7 message, extracting information from the SS7 message, and using the information extracted from the SS7 message to update presence information for the target end user with the presence server, wherein the presence server comprises a server that manages presence information for a collection of entities and subscriptions to those entities, the presence information including information usable by the

presence server for automatically indicating to end users who are subscribed to the target end user a presence status for the target end user.

6. (Previously Presented) The method of claim 1 wherein automatically generating a presence registration message includes automatically generating a presence protocol message.
7. (Previously Presented) The method of claim 1 wherein automatically generating a presence registration message includes automatically generating a session initiation protocol (SIP) message.
8. (Previously Presented) The method of claim 1 wherein automatically generating a presence registration message includes automatically generating an instant messaging and presence protocol (IMPP) message.
9. (Original) The method of claim 1 comprising, in response to receiving the SS7 message, sending a second message to an accounting and billing system.
10. (Original) The method of claim 9 wherein the second message is a copy of the SS7 message.
- 11-21. (Canceled)
22. (Previously Presented) A presence registration and routing node for updating presence information regarding an end user with a presence server, the presence registration and routing node comprising:
 - (a) a communication module for receiving an SS7 message relating to a target end user to which other end users are subscribed with the presence

server and for determining whether presence registration processing is required for the SS7 message; and

- (b) a presence server message generator for, if the communication module determines that presence registration processing is required, for receiving a copy of the SS7 message and for automatically generating a presence registration message including presence information usable by the presence server for automatically indicating to the end users subscribed to the target end user with the presence server a presence status for the target end user, wherein the presence server message generator is adapted to forward the presence registration message to the presence server, and wherein the presence server comprises a server that manages presence information for a collection of entities and subscriptions to those entities.
23. (Previously Presented) The presence registration and routing node of claim 22 comprising an advanced database communication module for encapsulating the presence registration message in an IP packet and transmitting the IP packet to the presence server over an IP network.
24. (Previously Presented) The presence registration and routing node of claim 22 wherein the presence registration message is a session initiation protocol (SIP) message.
25. (Previously Presented) The presence registration and routing node of claim 22 wherein the presence registration message is a presence protocol message.

26. (Previously Presented) The presence registration and routing node of claim 22 wherein the presence registration message is an instant messaging and presence protocol (IMPP) message.
27. (Original) The presence registration and routing node of claim 22 wherein the SS7 message is an ISDN user part (ISUP) message.
28. (Original) The presence registration and routing node of claim 22 wherein the SS7 message is a transaction capabilities application part (TCAP) message.
29. (Previously Presented) A presence registration and routing node for updating presence information regarding an end user with a presence server, the presence registration and routing node comprising:
 - (a) a communication module for receiving an SS7 message from an SS7 network; and
 - (b) a presence server message generator for generating, based on the SS7 message, a presence-server-compatible message for updating presence information regarding a target end user with the presence server, the presence information including a presence status for the target end user, wherein the presence server message generator is adapted to forward the presence-server-compatible message to the presence server, and wherein the presence server comprises a server that manages presence information for a collection of entities and subscriptions to those entities.
30. (Previously Presented) The presence registration and routing node of claim 22 comprising a presence server database operatively associated with the presence server message generator for receiving the presence-server-compatible

message and for updating the presence information in response to the presence-server-compatible message.

31. (Original) The presence registration and routing node of claim 30 wherein the presence server database is located internal to the presence registration and routing node.
32. (Original) The presence registration and routing node of claim 30 wherein the presence server database is located external to the presence registration and routing node.
33. (Original) The presence registration and routing node of claim 22 wherein the presence server message generator is adapted to receive presence queries, forward the presence queries to a presence server database, and receive responses from the presence server database.
34. (Original) The presence registration and routing node of claim 22 comprising:
 - (a) means for generating an accounting message based on at least one of the SS7 message received by the communication module and the presence-server-compatible message; and
 - (b) an accounting and billing system for storing accounting information based on the accounting message.
- 35-41. (Canceled)
42. (Currently Amended) A computer ~~program product comprising~~ readable medium encoded with computer-executable instructions ~~embodied in a computer-readable medium~~ for performing steps comprising:

- (a) receiving a signaling system seven (SS7) message in response to a telephony-related action performed by a target end user;
 - (b) in response to receiving the SS7 message, formulating an internet protocol (IP) message for updating presence information regarding the target end user managed by a presence server, the presence information including information usable by the presence server for automatically indicating to end users subscribed to the target end user with the presence server a presence status for the target end user, wherein the presence server comprises a server that manages presence information for a collection of entities and subscriptions to those entities; and
 - (c) transmitting the IP message to the presence server over an IP network.
43. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein the telephony-related action includes dialing a called party telephone number utilizing a PSTN telephone to initiate a call from the target end user to the called party telephone number and the signaling system seven message is an IAM message.
44. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein the telephony-related action includes entering DTMF digits using a PSTN telephone handset after a call has been established, the DTMF digits forming a code for instructing an end office to formulate the SS7 message.
45. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein the SS7 message is a transaction capabilities application part (TCAP) message containing presence information for the target end user.

46. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein the telephony-related action is the activation of a mobile telephone handset and the SS7 message is a message for updating the status of the target end user in at least one of a home location register (HLR) and a visitor location register (VLR).
47. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein formulating an IP message includes formulating a presence protocol message.
48. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein formulating an IP message includes formulating a session initiation protocol (SIP) message.
49. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein formulating an IP message includes formulating an instant messaging and presence protocol (IMPP) message.
50. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 comprising generating an accounting message in response to at least one of the SS7 message and the IP message and forwarding the accounting message to an accounting and billing subsystem.
- 51-60. (Canceled)
61. (Previously Presented) The method of claim 1 comprising routing the SS7 message to its intended destination.

- 62. (Previously Presented) The presence registration and routing node of claim 22 wherein the communication module is adapted to route the SS7 message to its intended destination.
- 63. (Previously Presented) The method of claim 1 wherein the telephony related action comprises activation of the end user's mobile telephone and wherein the presence information indicates that the target end user is currently reachable to receive messaging protocol communications via the target end user's mobile telephone.
- 64. (Previously Presented) The method of claim 1 wherein the telephony related action comprises entering a predetermined code via the target end user's wireline telephone and wherein the presence information indicates that the target end user is currently reachable via the end user's wireline telephone.
- 65. (Previously Presented) The method of claim 1 wherein steps (a)-(e) are performed at an SS7 signal transfer point capable of transferring SS7 signaling messages between SS7 signaling links.
- 66. (Previously Presented) The method of claim 1 wherein the presence information includes information usable by the users subscribed to the target end user for contacting the target end user via an instant messaging protocol.
- 67-68. (Canceled)
- 69. (Previously Presented) The presence registration and routing node of claim 22 wherein the communication module includes SS7 signal transfer functionality for transferring SS7 signaling messages between SS7 signaling links.

70. (Previously Presented) The presence registration and routing node of claim 22 wherein the messaging protocol comprises an instant message protocol.
71. (Previously Presented) The method of claim 29 wherein steps (a)-(d) are performed at an SS7 signal transfer point capable of transferring SS7 signaling messages between SS7 signaling links.
72. (Previously Presented) The presence registration and routing node of claim 29 wherein the presence information includes information usable by the users subscribed to the target end user for contacting the target end user via an instant message protocol.
- 73-74. (Canceled)
75. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein steps (a)-(c) are performed on an SS7 signal transfer point capable of transferring SS7 messages between SS7 signaling links.
76. (Currently Amended) The computer ~~program-product~~ readable medium of claim 42 wherein the presence information includes information usable by the users subscribed to the target end user for contacting the target end user via an instant messaging protocol.
- 77-78. (Canceled)
79. (Previously Presented) A method for updating presence information regarding a target end user managed by a presence server based on information derived from a telephony-related action, the method comprising:
- (a) receiving a signaling system seven (SS7) message in response to a telephony-related action performed by a target end user to which other

end users are subscribed with the presence server, wherein the SS7 message comprises and ISDN user part (ISUP) message;

- (b) determining, based on the SS7 message, whether presence registration processing is required;
- (c) in response to determining that presence registration processing is required, automatically generating a presence registration message including presence information usable by the presence server for automatically indicating to the end users who are subscribed to the target end user with the presence server a presence status for the target end user; and
- (d) transmitting the presence registration message to the presence server over an IP network.